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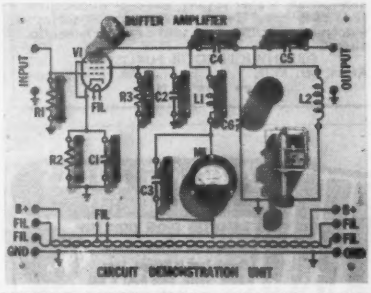

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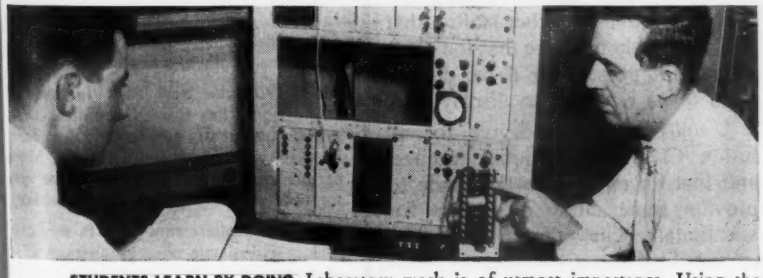

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Comment

I READ WITH interest "Let's Not Forget. . . ."

Econimic conditions, along with the cries of the failures of the American education system, seem to dictate to parents, guidance personnel, and a host of others that everyone should go to college. Aptitudes, abilities, interests of the students have come to mean little to all but the student himself. . .

May I be allowed to use, in part, your editorial for publication in our local newspaper as a public relations tool? I know it would help me tremendously in "selling" vocational education in this community.—JAMES R. WESTALL, Director of Vo. Ed., Waltham, Mass.

* * *

CONGRATULATIONS on . . . *The Enemy Unseen.* We, here in our very small program, have bent over backwards in an endeavor to establish ourselves as a part of and not something separate from the rest of the high school program.

I have long believed, and still contend, that the vocational program, and the teachers in it, will be an accepted part of the high school if and when we are capable of establishing our program on a level of intelligence and accomplishments equal to that of the regular academic program; and when we can, as teachers, take our places on an equal footing—teacher-wise and professionally.

We have too long been proud of our position as something apart from the rest . . . and have been either too willing to be content with our ability to teach the skills and too adamant about our other skills—that is, skills we should have that too often we do not possess, or if we do, we seem to be reluctant to display.

I suggest an AA degree for all future Class A vocational teachers and that an extra effort be made to provide some cultured courses for vocational teachers that they can take in fulfilling increment requirements and that they be encouraged to take such courses. We cannot too long remain efficient only on how to teach rafter layout, valve grinding, etc., if we expect to find standing room on cloud thirteen with the academic teacher.—THEO CHEGWIDDEN, Supervisor, Industrial Education, Eureka, Calif., Public Schools.

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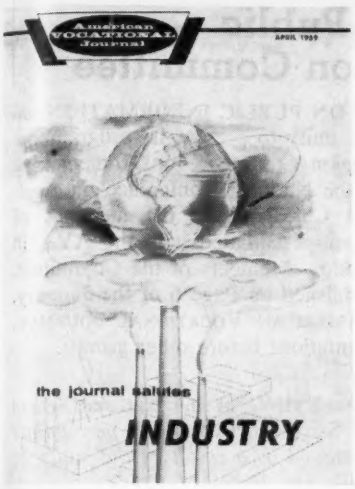

THE COVER

Special features in this issue are in tribute to the major role of industry in maintaining and promoting social and economic security for people throughout the world.

Next month, the JOURNAL salutes South Carolina.

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All members of the American Vocational Association, Inc., receive the Journal; 25 per cent or more of membership dues reserved for Journal. Membership applications should be submitted through state vocational association secretaries. Order library and non-member subscriptions at $3.00 a year from AVA, 1010 Vermont Ave., N.W., Washington.

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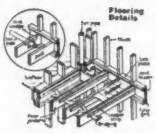

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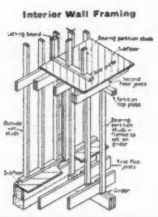

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From the Public Information Committee

THE COMMITTEE ON PUBLIC INFORMATION has recently had an opportunity to present its program before the Southern Region Conference on Homemaking Education at Dallas, the National Conference on Agricultural Education at Chicago, and the meetings of the officers of state groups affiliated with the AVA in New York and Colorado. Members of the Committee, whose names were published on Page 6 of the January, 1959, issue of the AMERICAN VOCATIONAL JOURNAL, are available for presentations before other groups.

* * *

ASKED AT THE MEETING of the National School Boards Association at San Francisco, *What new points of view have you developed as a result of the study of American high schools?*, Dr. James B. Conant replied, as reported by *The Nation's Schools,* that his personal visits to 55 schools and his study of 48 other schools had introduced him to the area of vocational education and the real purpose it is serving.

"In many instances I was thrilled by what I saw," he added.

* * *

SIX STATES (Oregon, Oklahoma, Georgia, Pennsylvania, Illinois, and Iowa) were represented at a conference on occupational opportunities for farm young men, held at Iowa State College January 19 and 20, 1959. A second conference on May 18 and 19, national in scope, will deal with adjustments in the teaching of agriculture in the public schools due to changing agricultural conditions. Both conferences are sponsored by the Agricultural Adjustment Center of the College. These conferences are likely to do much directly and indirectly, toward informing agriculturists regarding agricultural education in the public schools.

* * *

THE COMMITTEE ON PUBLIC INFORMATION will soon suggest to presidents of state vocational associations that they organize in their states to provide the public with more adequate information about vocational education. The Committee will suggest that the president of the state association and the state director of vocational education act as co-chairman of the group conducting the project. If you want something done in your state, tell your state president.

* * *

WE ARE CHEERED when we hear that vocational educators are working with school board associations and citizens committees. Dr. Ralph E. Bender of Ohio State University was recently elected Treasurer of the Central Region of the Ohio School Boards Association. Dr. M. D. Mobley spoke in October before the Ohio Association. His address, *Education for Freedom and Security* was featured in the Association's magazine, *School Boards,* for January 1959.

Dr. Milo J. Peterson of the University of Minnesota is acting chairman of the Minnesota Citizens Committee on Public Education. Dr. H. M. Hamlin of the University of Illinois is one of the two general consultants to the Illinois Citizens Education Committee whose office is his office.—H. M. Hamlin, Chairman

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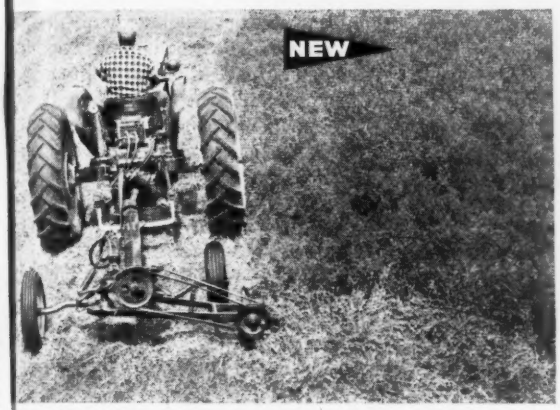

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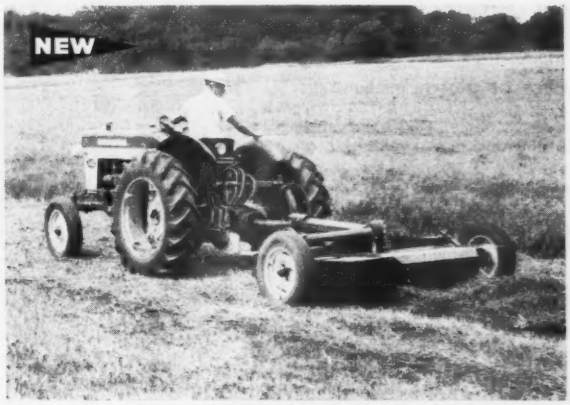

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Comment

IN THE MARCH JOURNAL, the article on adult homemaking on TV by Priscilla Rugg of St. Paul is especially interesting.—EMMETT O'BRIEN, Connecticut State Director of Vocational Education.

* * *

YOUR LATEST word from Washington (March JOURNAL) is one of the finest editorials in the defense of vocational education that I have ever seen.

I congratulate you upon this masterpiece and wish you continued success in the very fine work you are doing.—C. M. REED, Assistant State Supervisor of Agricultural Education, Atlanta, Ga.

* * *

PLEASE accept my sincere thanks for publishing my article—*How to Add to DE Enrollments*—in the December JOURNAL. It is nice to know that those of us in the teaching profession can receive recognition for our ideas in such a fine magazine.

I have received several fan letters. One was a fine letter from the American Petroleum Institute.—WILLIAM A. SPEARY, Coordinator of DE, San Jacinto Senior High School, Houston.

* * *

CONGRATULATIONS on a well-done salute to Texas. As a DE teacher, it is heartening to see some areas where expansion is taking place.

I was also most pleased to read *Career Opportunities in the Retail Food Industry*. I am sure all DE readers will be delighted with this. I sincerely hope it opens their eyes, for in small communities this offers a vast field of employment when guidance departments in schools can be shown the wages and hours worked as compared to other fields.—FABIAN ENGLANDER, Nyack Junior-Senior High School, Nyack, N. Y.

* * *

YOUR ANALYSIS of the problem of the "unseen enemy" is excellent and becomes even more evident every day. Your closing paragraph summarizes exactly what ails our program. My own observations coincide with yours. — RALPH R. DEMMLER, Apprentice Education, Los Angeles City Board of Education.

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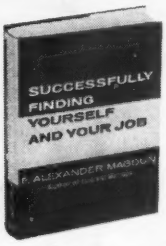

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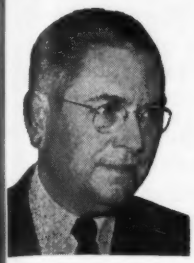

Latest Word from WASHINGTON

► THE JOURNAL SALUTES INDUSTRY. This month's cover is intended to remind you that industry makes the world go 'round.

We hope the special features in this issue will also bring to mind the rich and consistent contributions of vocational and practical arts education to the plans, machines and plants that make up our industrial world.

► THE 1959 AVA CONVENTION. AVA members will find the first official announcement of 1959 Convention plans on page 28. We feel certain that we will have a record attendance at Chicago, December 5 - 11, and we urge all those who plan to attend to make hotel reservations early. Plans for a top flight convention program are now under way.

► LEGISLATION. Congress recessed for Easter holidays on March 26 and reconvened on April 7th. Prior to recessing, action was taken on several measures of interest to vocational and practical arts educators.

The Senate approved by a vote of 49 to 46 the area redevelopment measure which carries in Section 16 provisions for vocational training programs to be carried on by state and local vocational authorities for unemployed persons residing in areas selected for redevelopment aid. AVA had asked for certain changes in the language of the provisions dealing with training and was successful in getting the major changes requested. The House Banking and Currency Committee will doubtless take action on this measure soon.

► APPROPRIATIONS. Hearings on the Appropriations Bill which carries an item for vocational education were resumed after Congress reconvened. They should be correlated on or about April 16. It appears that the House Committee will approve appropriations for the full amounts authorized under the George-Barden Act for agriculture, distributive education, home economics and trades and industry. There is some indication that the committee will not approve President Eisenhower's proposed $1,100,000 cut in practical nursing funds. Hearings in the Senate on the vocational appropriations for fiscal 1960 should begin in a matter of days.

► THE VETERANS EDUCATION MEASURE. Hearings are already under way on S. 1138 which carries provisions making educational benefits available for persons who have served in the armed services since the end of the Korean War. AVA has arranged for four witnesses to appear before the Senate Committee in support of this measure. Two of the witnesses will be former trainees in vocational programs for veterans under previous acts of Congress.

A similar bill, H.R. 5319, has been introduced in the House. Hearings on this measure will be held in the near future. Plans are under way for AVA witnesses to appear before the House Veterans' Affairs Committee favoring educational benefits for veterans who served in the armed services since the Korean War.

► MURRAY-METCALF BILL. Extensive hearings have been held by two-subcommittees of the House Education and Labor Committee on the Murray-Metcalf bill—S. 2 and H.R. 22. This bill authorizes appropriations for salaries of teachers and for school construction. It is anticipated that the total cost, should the bill be approved in its present form, would in time run into several billion dollars annually. The NEA is giving all out support to the measure.

► WAGE HOUR MEASURES. Several measures have been introduced in both the House and and Senate proposing increases in the minimum hourly wage for workers. If and when these measures are brought up for committee consideration, AVA will take appropriate steps to safeguard cooperative part-time training programs in distributive education and in trades and industry.

► THE JOINT FEDERAL-STATE ACTION COMMITTEE PROPOSAL. No measure has yet been introduced in Congress to carry out the proposals of the Joint Federal-State Action Committee, one of which is to eliminate federal funds for vocational education. As previously reported (February JOURNAL), President Eisenhower has again recommended that legislation that would result in the "discontinuance of federal grants for vocational education and for waste treatment construction" be "speedily enacted."

In the meantime, a measure (H.R. 2776) which calls for the repeal of the ten per cent excise tax on telephones has been introduced by Rep. A. Paul Kitchin (D), N.C. Many vocational educators are supporting this measure, which has been referred to the House Ways and Means Committee.

The various telephone systems of our nation are inserting flyers with monthly statements to customers urging them to contact their members of Congress and ask them to vote favorably on the measure to repeal the excise tax on telephones.

One of the proposals of the Joint Federal-State Action Committee is to reduce the federal excise tax on telephones and to encourage states to levy taxes on telephones. The proposal of the Joint Committee, should it be enacted into law, would result in a $60 million annual loss to the federal government since the tax reduction on telephones would result in a loss in revenue to the federal government of $147,000,000 while federal grants for vocational education and waste treatment construction amount to only $86 million.

► REGIONAL OFFICES FOR THE OFFICE OF EDUCATION PROPOSED. Office of Education officials, through testimony before a House Appropriations subcommittee, have revealed plans to establish representatives in five regional offices "to provide overall field coordination and leadership" and to "assist in direct implementation of the Act" (National Defense Education Act). This is proposed even though the Chief State School officers at their annual meeting in Chicago, November 11-15, 1958 included in approved resolutions the following:

"We believe any plan to establish Office of Education personnel in the regional offices of the H.E.W. Department to work with state and local educational agencies will delay action, create confusion, and unnecessary expenses, and undermine the maintenance of sound federal-state relationships in education."

Some members of Congress are pointing to the proposal to establish regional offices and the request for an increase of 45.6 per cent (from $8,786,500 appropriated for 1959 to $12,800,000 requested for 1960) in the appropriation for the Office of Education as evidence that plans are under way for what they have claimed for years would happen should liberal amounts of federal funds be made available for education, that is, federal control and domination of education—especially federally aided programs.

The appropriation for "salaries and expenses' for the Office of Education has grown from $2,900,000 for fiscal 1955 to $8,786,500 for the present fiscal year—and a request for $12,800,000 for fiscal 1960.

► PRESIDENTIAL ELECTION. See page 20 of this issue for the announcement of the election of Edward M. Claude, Illinois State Chief, Trade and Industrial Education, as AVA President for the year which begins December 1, 1959.

More AVA members voted in the Presidential election this year than last year but the total per cent is still too low.

W. D. Mobley

Executive Secretary and Editor-in-Chief

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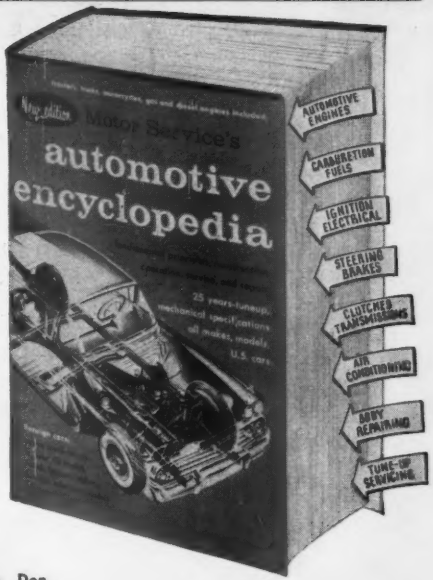

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JACK KLEINODER, of Volkert Stampings, and president of the National Tool and Die Manufacturers Association, watches an apprentice at work.

Help Wanted in the Skilled Crafts!

THE NUMBER of skilled craftsmen is declining so rapidly in all trades that concern is sweeping through industry, labor and government. At the same time, new techniques, new products, entire new industries are blossoming forth across the nation. Each calls for new knowledge and new skills. Where and how are these new skilled workers and technicians to be found and trained?

The U. S. Department of Labor estimates 2,000,000 new trained skilled workers are needed each year —but only about 28,000 registered apprentices reach journeyman status annually. This is the challenge before both industry and our vocational education system.

VOCATIONAL SCHOOLS contend they are doing the best possible job they can with the funds and the student material available to them. They blame industry and other forces beyond their control and jurisdiction for not making a bigger effort, for not doing more to stimulate and encourage apprentice training and vocational education. In fact, educators believe greater emphasis needs be given to all forms of vocational education, including apprentice and craftsman training, by the four groups most directly involved—industry, the federal and state and local governments, the labor unions, and the schools.

Already critical shortages are evident in many industries—especially in building and construction—in the metal trades, in electronics, public utilities, printing and graphic arts, in maintenance and service trades. In short, in all lines the training of highly skilled craftsmen has been neglected.

The National Association of Manufacturers reports that this situation is so serious that some industries, such as chemicals and petroleum refining, are "already investing 80 per cent of their production payrolls solely for maintenance."

The emphasis has been on engineering. The need for more engineers is growing. But this emphasis reveals a widening gap in production operations, one which is causing much anxiety throughout industry—the need for skilled workers capable of building — and maintaining — the intricate and complex machines that engineers are designing.

"SKILLS IN all trades have dropped to an all-time low, and we must reverse that trend or we are very much in trouble," one forward-looking industrialist said recently. "I can foresee the time—and soon—when engineers' desks will be piled high with plans and specifications they are unable to see executed because of the lack of skilled men able to build

and the cry calls for all possible action by industry, labor, government, schools and parents

Bench work comprises almost half of the 8000-hour Volkert apprentice training schedule. Among other things, they learn hand filing; micrometer reading; use of gages; layout work; and assembling, finishing, repairing dies.

them. We can get these important human qualities back into industry only through giving new value to skilled craftsmen and through making the skilled trades more alluring to youth. Young men are not learning trades in sufficient numbers to maintain our present machinery, let alone build for the future.

"Adequate training of apprentices is so basic that our standard of living—yes, our very survival as an industrial nation—depends on how well we train men for industry.

"There is direct relationship between quality of product and quality of skilled help."

From all branches of industry, from the Department of Labor, from state employment services, from vocational schools, the voice of anxiety is rising.

Most students of the problem agree with this industrialist that there is only one way to overcome the present and future shortages in skilled workers in all categories—*get and train more apprentices.*

The federal government is taking increased interest in this entire situation. Many proposals to aid training programs were introduced and discussed in the past session of Congress. One was approved and signed into law—the National Defense Education Act of 1958—or, as it is more popularly called, the Hill-Elliott Act. This shows the concept of federal support to states for further development of area vocational education programs. The Act authorizes an appropriation of $15,000,000 annually for a period of four years, and this money "shall be used exclusively for the training of individuals designed to fit them for useful employment as highly skilled technicians in recognized occupations requiring scientific knowledge."

EDUCATORS SEE this as a helpful, encouraging step. The next and bigger step will be that of selling youth on taking these training courses and winning the wholehearted *cooperation of parents.* The problem involving parents lies in a lingering impression of machine shop work as being a lowly endeavor carried out under unhealthy conditions and offering little or no promise for the future. In reality, nothing could be further from the truth. The modern machine shop is a healthy, well kept, orderly place in which to work. Today the apprentice, and his skilled counterpart, works in an environment that is clean, orderly, well lighted and well ventilated. He works with complicated and extremely valuable high-precision equipment, and his career presents a constantly increasing challenge, with unusual dividends in satisfaction. He is, by any standard, well paid for his important skills.

Youth hasn't been educated to the blue-collar security

Yet it is axiomatic there is no short cut to developing one's skills and acquiring practical knowledge.

With 2,000,000 graduates a year from apprentices to journeymen needed, only 28,748 were graduated in 1957, and 14,771 in the first six months of 1958, according to the U. S. Department of Labor. This report says 186,646 were in training at the start of 1957, 186,301 at the start of 1958, and 178,736 at the end of June, 1958. There were 58,463 new registrations in 1957 and 22,314 for the first half of 1958. Cancellations exceeded graduations in 1957, with 30,090 dropping out, and again for the first half of 1958 with 15,108 falling by the wayside. The year 1957 ended with a drop in the number of active trainees. In the first six months of 1958, this drop became a loss of 7,565. It is this steady drop that shows the seriousness of the entire apprentice training system most sharply.

The Department of Labor states that young people are asking: "Why should I serve an apprenticeship?" This especially when they say they can get a job that pays just as much money or more driving a truck?

The answer given is along this line: To progress in the stiff competition of today's industry, you must be able to do jobs requiring more than a few weeks' or a few months' experience. Semi-skilled help no longer fills the bill. Complete, well-rounded training provides something that no one can take away from you—a life-long increased earning capacity in a well-paying job, with greater security, and with the opportunity to qualify for positions of higher responsibility in industry.

THE FEDERAL government is spending more than $58,750,000 a year to help vocational education. But, unfortunately, the interest is just not there, either from top management or from among our young people.

The lack of interest by top management is called "gravely serious" by one industrialist, who adds, "Unless top management of both large and small companies take a more active interest in training skilled workers, industry may become like the dinosaur—big—unwieldy—unable to survive."

The apprentice program is a combined responsibility of management and labor. The educational aspects are provided by the public schools. The promotional services are usually left to the state and federal agencies.

The best method of training apprentices have been proven to be on-the-job training with part-time school instruction. So the apprentice-training program is an important link between our educational system and industry.

The schools are considered by the national government as an indispensable part of apprentice training, so much so that Congress has enacted national vocational education acts to provide greater apportunities for more young people in training for trades and crafts. These acts provide for apprentice-in-school training, refresher and up-grading courses for journeymen, and training for prospective foremen and supervisors.

The two major acts for national vocational education, before the Hill-Elliott Act of 1958, are the Smith-Hughes Act of 1917 and the supplementing George-Barden Act of 1946. Congress is providing funds under these acts to the amount of $58,750,000. The federal funds are being matched by state and local funds in a ratio of about $4.50 to each federal dollar.

Though Congress provides federal money, the U. S. Office of Education does not conduct the program. That is the responsibility of state and local school authorities. In most cases, the states gives local authorities the operational responsibility. About 2,000 urban areas have state or locally operated public trade or vocational technical schools.

TECHNICAL HIGH schools are doing excellent jobs—but there are not enough of them. Some courses are born of necessity in industry and the community.

For example, three major airlines were moving into Miami as their chief maintenance center for their aircraft. This meant desperate shortages in airplane mechanics in all grades. The Lindsey-Hopkins Vocational School in Miami stepped forward and introduced airplane mechanics apprenticeship courses. The airlines cooperated wholeheartedly, even furnishing two- and four-engine planes. The Tech High move was an answer to this skilled worker shortage which seemed so serious that it was believed at the time this maintenance work would be forced out of Miami.

Much of the growing shortage in skills can be traced to the wrong emphasis on white-collar jobs. No matter how small the pay, the fact is a white-collar job usually means a higher social standing than is accorded a blue-collar neighbor who might earn twice or three times as much take-home pay.

One result of this has been that youth has not been sold sufficiently on blue-collar jobs. In many cases, this is because the father has been a blue-collar worker and wants his son or sons to go into a profession or at least into a white-collar occupation. This despite the overcrowding of the white-collar field and the greater security and higher pay in most blue-collar occupations.

ANOTHER REASON for this shortage of skilled workers is the resistance of some managements and of the labor unions. Youth just hasn't been educated to the blue-collar security. Managements have not always proven alert to the need to train their own skilled workers and to meet changing conditions. They have left too much of this planning to secondary management.

Unions have sought to keep the scarcity value to jobs—keeping apprentices out of various lines of work—even setting such ratios as one apprentice to each 10 journeymen—for admission to apprenticeships. The unions are now easing many of their restrictions on apprentices. They also know the danger to them and to the labor movement and to industry in general for such shortages in the skilled trades and crafts.

Retirements and loss of trained craftsmen are forcing manufacturers to seek substitutes for skills. Unfortu-

How Jack Kleinoder handled a serious problem of supply

nately, they are using many makeshifts in operations, even "quickie" training in specialized jobs, all resulting in a steady lowering of quality.

"This is getting serious," one company official commented to the writer in discussing why an automotive concern had to conduct a world-wide search to recruit 480 tool and die makers which it needed for an emergency retooling program. There just were not enough men obtainable in our own country with the right kind of training and skills to handle the project.

Because of the gravity of this situation, the critical shortage of skilled men in his critical industry, and because tool and die making is the keystone of all industrial progress, operation and development, one man, Jack Kleinoder, decided to lead a movement to do something about it. As General Manager of Volkert Stampings, Inc., of Queens Village, Long Island, New York, a leading producer of precision metal parts for the electronics and television industries, he sparked an aggressive apprentice training campaign by the National Tool and Die Manufacturers Association, of which he is now president. He also started in his own company what is now widely acclaimed as the model training program for apprentices.

Mr. Kleinoder, trained to his trade of tool and die maker in the rigorous apprentice training system of prewar Germany, wanted to assure his plant of a steady flow of skilled craftsmen. He knew it would be difficult, if not impossible, to get the needed skilled help in the open market.

WITH THE hearty cooperation of John Volkert, president of the firm, also German-trained as a tool and die maker, he set aside a 2500-square-foot area of a new building, apart from regular shop operations. Special machinery was moved in. A modern class-room was outfitted. A paid supervisor, with more than 40 years of practical experience, was put in charge. Instructors from Pratt Institute of Brooklyn, a college for training in the arts, engineering and library services, come to the plant to conduct theory classes in mathematics, physics, blueprints and shop practices. The course was set for four years or 8,000 hours, with 200 hours a year of class-room training under state and federal apprentice standards.

The National Tool and Die Manufacturers Association named Mr. Kleinoder chairman of its apprentice training committee. Leading tool and die executives from other sections of the country—including Herbert Harig, president of Harig Manufacturing Corporation, who is spearheading a series of books on related instruction for tool and die apprentice training, and John D. Dewhurst, president of Arrow Tool Company, present chairman, linked up with Mr. Kleinoder, and a program was worked out.

A code was approved by the Association, by the U. S. Department of Labor and by numerous state authorities. Local vocational authorities were utilized in setting up and conducting the program.

The course which Mr. Kleinoder set up in his company is a part of the regular production activities of Volkert. Apprentices start on actual work, on the simplest tasks, and gradually work up to more complicated jobs. Everything the apprentices make is used in the company, except test materials.

ORIGINALLY, MR. KLEINODER and Mr. Volkert estimated it would cost them between $4,000 and $6,500 to train each man. Now they figure their total training costs run about $2,000 for each apprentice.

"A boy will actually start to support himself in the second year of his training, if he is properly selected," Mr. Kleinoder says. "A great deal of care must be taken in his selection."

Applicants must meet the State Employment Service aptitude and qualification tests, have personal in-

No rumbling robot will ever do the craftsman's job

terviews and physical examinations, and finally aptitude tests by an independent research concern. Successful applicants start work on a 1,000-hour probation basis.

"Either the boy or the employer can terminate the apprenticeship agreement during this time. We have an opportunity to really judge the boy, and the boy to judge his employer. This contract is now general for most training courses for other industries also.

"Volkert's program calls for daily rating by the supervisor of each apprentice—by job and by job quality. The time spent monthly on each type of machine is recorded. The fourth year is spent in the tool room. Throughout this time, the apprentices are also going to school for their theoretical training.

"Training cannot be formalized, however, to so many hours per item. Standards set are guides—but progress depends on the individual."

Business leaders in other industries are finding a lot of logic and sound reasoning behind every move Mr. Kleinoder has made. He has been much concerned—as others are in the tool and die making industry—with the steady drop in quality in nearly all lines of work and in the increasing shortages of skilled craftsmen to do necessary skilled work.

"It costs as much to produce a poor item as a good one," he says. "A poorly designed building, for example, costs as much, and sometimes more than, a well-designed building. A building poorly executed from the finest architectural plans will always be costly, ugly, and a poor building, with high maintenance costs.

"ONE OF OUR pressing needs, admittedly, is for engineers. But engineers are not enough—for we would find ourselves with mountains of plans and designs with no one able to build what has been planned and designed. We need men skilled to carry out engineers' planning. Many young men who cannot become engineers have excellent thinking ability, sound reasoning powers, and good mechanical aptitudes. It is these young men we must train if the entire metal-working industry is to survive. Technological advances will continue to increase the demand for highly skilled technical workers.

"Because all machinery—all processes—all production—depends on basic tooling which only highly skilled journeymen can execute, and because tremendous quantities of goods and services are demanded by our increasing population and our rising standards of living, we need far more skilled workers than we have or can get in the foreseeable future. The only answer is more and better apprentice training.

"A HIGH grade apprentice is needed today, as standards for skilled work are rising still higher for the complex equipment required by our advanced mechanization. Our electronic civilization is making greater demands on our skills.

"Apprentices today must get instruction on a much broader scale. Second or third-rate students haven't got the mental ability to absorb the subject matter needed.

"The apprentice we need must be an intelligent young person capable of absorbing mathematics, technical subjects and to some degree scientific instruction—and must at the same time be able and willing to work with his hands. We now use the entire man—mind and body—to build and maintain the complicated equipment our engineers are designing.

"Training must be of mind as well as hands, so he will know *why* he does everything. New problems are constantly arising, with no two alike, and even tools are changing continuously. He must keep abreast . . .

"Apprentice training is more than just developing skill, necessary as that is. He must acquire a fund of knowledge about his job and how to apply this knowledge. The course must also train him to think" . . . vocational authorities have responsibility for this phase of the training.

"Tools, dies, jigs, gauges, molds and special machines have become the fundamental equipment of our entire mass production and manufacturing processes, and we must have skilled men to build them—and to maintain them—if we are to survive as the leading industrial nation."

THERE WILL continue to be great opportunities for engineers in industry, every source indicates, but opportunities are seen in far greater numbers for apprentice-trained craftsmen.

Many leading industrialists say the successful executives of tomorrow will be better qualified for their responsibilities if they have a background of apprentice training.

Going back to the Department of Labor's reports for 1957 and for the first half of 1958, we find some states where drop-outs are severe, even exceeding new enrollments. In 1957, there was only one area, the District of Columbia, where cancellations exceeded new registrations, while in the first half of 1958, there were nine states where this was true. In 1957, there were 21 states that ended the year with fewer trainees than at the start of the year. At the end of June, 1958, there were 34 states with a drop in the total number of apprentices in training over the start of the year.

This is especially serious when we consider that drops occurred in all major industrial states except Illinois which had a gain of 151 for the first six months of 1958, with 13,839 compared to the January 1 figure of 13,688. Illinois also had a gain of 692 for the year 1957. And so it goes, state by state.

THE CRITICAL skilled worker shortages cause the National Association of Manufacturers to say: "Consider the iron and steel industry. There are more than 4,000 different kinds of jobs in the 300 plants throughout the nation. The best-paying, most interesting assignments are those demanding the most skill and understanding.

"Industry wants more and better trained people to meet the challenges of tomorrow.

"Even in the most completely automatic, push-button factory of the future, detailers, draftsmen, production planners, skilled machinists and other craftsmen will have to plan, shape and assemble the parts and they will have to be around to maintain and repair the equipment. No rumbling robot will ever do the truly skilled man in the shop out of a job!"

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Industrial Education for today and tomorrow

By Joseph T. Nerden

WE HAVE all seen school names changed from "Trade School" to "Trade High School" and "Technical School." Regardless of the name, the prime purpose of such institutions is to prepare for work in the field of industry. Changing the name without changing the content of the industrial education program within has never been regarded as an effective means of adapting the program to modern needs.

In the early days of trade school teaching, a small portion of student time was devoted to the study of mathematics and science out of a school week of 44 hours. Only four hours per week were then "allowed," since this was presumed to be all that could be "stolen" from the valuable trade-training program. Industrial education has certainly progressed far beyond this point of view, and in most schools offering industrial education today, the percentage of time for technical subjects has been enormously increased.

Further, the craftsman is being prepared to take his place in a society which includes labor organizations, unions, and social and civic groups. Even though the program of general education offered by an industrial school may appear at times to be in conflict with the philosophy of the "dyed-in-wool" traditional trade educator of an earlier day, it is clear that the development of these tremendously important attitudes and appreciations leading to social competencies and citizenship of the craftsmen actually have *trade value.*

Mr. Nerden is Chief, Bureau of Technical Institutes, Connecticut State Department of Education.

ONE OF the most important functions of any industrial education offering is to keep the program of instruction up to date. It is necessary to continually study traditional trades in our trade and industrial program and to modify the instructional content, technical information, and teaching methods relative to them, in keeping with the needs of the industries to be served.

For example, an examination of programs for students preparing for the field of electricity might show an abundance of time given to bell-wiring, motor-winding, construction wiring, and the like. However, with the advent of the nuclear and electronic era and the need for the graduate of the secondary school electrical course to demonstrate knowledge in the field of basic electronics, it has become necessary to made adjustments in the program to include at least a modicum of basic electronics. Many graduates are employed by industries where the need for a knowledge of basic electronics is part of the over-all responsibility of their jobs as plant electricians, maintenance men, or other categories.

Consider the printing trade, too. National associations which represent the graphic arts trades point out that in most areas of the country, the printing trade has changed so drastically that it has been difficult for industrial training agencies to keep abreast of its needs. In place of some of the conventional printing instruction content has come lithography, and color lithography. Over half the gross business done by the printing industries is in the field of lithography, both single and multiple color. This indicates the need for the trade school to adapt its printing program to the needs of the young people who will be restricted to one out of two jobs offered unless the elements of lithography are provided.

An examination of the competencies of today's mechanical draftsman discloses the urgent need for a broad instructional program that includes hydraulics, electronics, and pneumatics. Only recently, when a representative group of employing machine tool firms were asked to assist in the modification of the program of instruction for mechanical drafting students, the group summarized recommendations by announcing that the day of the pure machine draftsman was about over, and that the design of machinery and machine tools now involves a better-than-average understanding of the principles of hydraulics, electronics, and pneumatics.

WE MUST STUDY our traditional trades and make room for girls and women. For too long, instruction and employment in the traditional trades has been largely reserved for young men. In numerous cases, however, when girls have enrolled in or have been employed in these trades, they have indicated a suitable degree of proficiency, ability, and adaptability.

As our skilled labor force is depleted by growing employment demands, the need for more women in industry becomes more pronounced. Trade and industrial educators should therefore study the basic trades and provide appropriate public information and guidance relative to the educational and employment possibilities that exist for women.

THERE IS NEED to extend the program of trade education upward into additional years. Several traditional trades now require an extra year or even more in order for trainees to acquire the necessary additional technical information and coordinating hand skills. It is inevitable that the four-year graduate return to school for an additional year in order to become familiar with the skills of the die-maker and the toolmaker, and to familiarize himself with the technical aspects of basic electronics and pneumatics.

The nation's industrial machine needs technicians

A General Motors management representative recently said that "the young man who is prepared only as a machinist will most certainly reach the fringe of his technical knowledge within a very short time after employment, since most of the large corporations whose production lines have become automated require that the machinist be familiar with electronic control devices and the pneumatic operating devices which actuate the automated lines."

THIS FORWARD look applies to apprentice training, where for the most part, offerings are at the secondary level of education. The traditional pattern for training industrial apprentices is familiar to all. Industry provides the on-the-job training, and the vocational school provides the related instruction. Basic skills in mathematics, blueprint reading, and other related areas must continue to be supplied for apprentices but it is clear that additional time to acquire the necessary mental skills to work effectively with the elements of basic electronics, hydraulics, and pneumatics must be scheduled. This may mean an extension of the related subjects program for apprentices into a fifth or even a sixth year.

Unquestionably, the possibility of extending apprentice training time will jar the composure of some apprentices, some joint apprenticeship councils, and even some state apprenticeship councils. But, if the young craftsman graduating from the industrial schools must be equipped with these basic skills, then it follows that the apprentice—who is the counterpart of our graduate through a parallel system of training—will also have to acquire approximately the same mental skills. Incidentally, this is neither a wild thought not a hypothetical case, since there is evidence that a significant number of large industries are using this approach.

Apprentices of large machine tool industries are currently enrolled in courses which include advanced technical mathematics, the physical sciences, chemistry, technical drawing, applied mechanics, and basic electronics. Obviously, apprentices that complete such a broad and varied technical program will have available to them far more opportunities for growth and advancement within their respective industries than the graduate apprentices whose mathematics stop at the trigonometric solution of right triangles and whose blueprint reading stops short of instrumental drawing.

FOR THE IMMEDIATE future, it has become manifestly clear that the really big development in industrial education will take place with the institution now popularly referred to as the Technical Institute.

In some cases, the Technical Institute operates at the post-secondary level, while in other cases (even as a declared post-secondary institution) the instruction offered would appear to be quite similar to that offered in the traditional vocational-technical school. General agreement on terminology and descriptions of Technical Institutes and their offerings is only now beginning to settle out. In the very near future the likelihood of misunderstanding about instruction which is termed "technical" in one case and similar instruction which is termed "trade," will be eliminated.

In preparing young people for an industrial economy, and particularly for the missile age, there is need to be cognizant of the tremendous need for technicians and the part which vocational educatioin will have to play in their training.

Some steps are already being taken to help alleviate the shortage of technicians. The *Trade and Industrial Branch* of the U. S. Office of Education sponsored a National Conference in 1957 that analyzed the problems and needs in terms of technicians, and guided the development of five subsequent regional workshops in the field of technical education. The U. S. Office of Education also has promoted conferences on technical education in over half of the states to further implement the need for technician education.

The need for technicians has been a matter of tremendous concern, but we can be assured that it has been recognized by industrial educators, who will give it their usual appropriate attention in keeping with their traditional reputation for meeting problems and solving them.

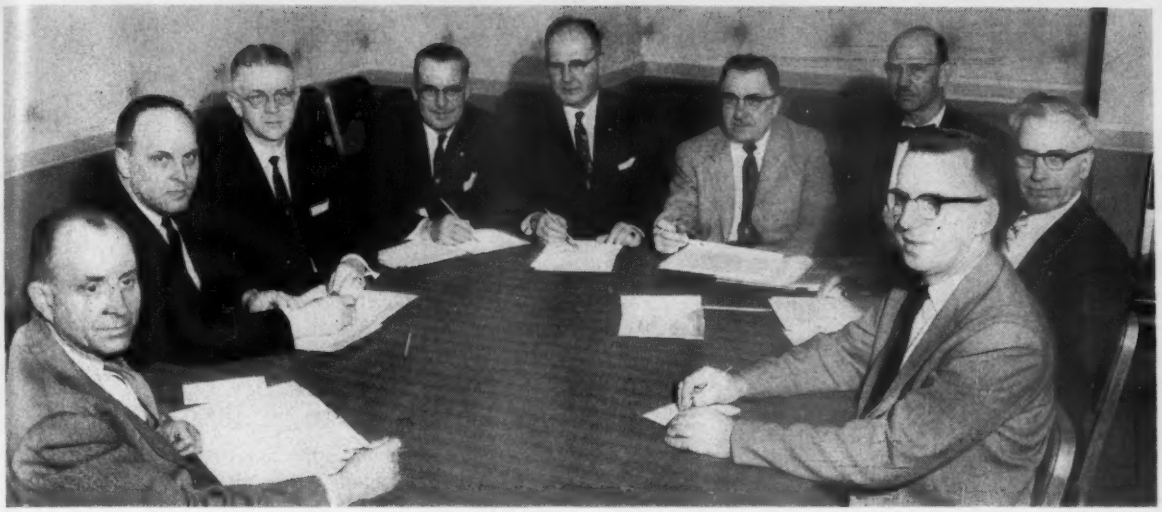
The same common sense approach, the same detailed analysis of our needs, and the identical procedures that have been used in the past to consistently modify our instructional programs in keeping with industrial needs, will provide all of the motivation and guidance required for providing the industrial machine of this great nation with efficient technicians.

One may ask, "Why should the trade school or the trade and industrial educator be concerned with a post-secondary technician training program?" This question is significant since, in some states, such post-secondary education is entirely out of the hands of the trade and industrial educator. In other states the motivation, promotion, and activity concerned with the preparation of technicians is the responsibility of the division of vocational education.

Federal funds, regularly appropriated for reimbursement of trade and industrial education activities can *and are being* used to stimulate further development of technician training programs. Since the preparation of the technician results in an individual who is neither a craftsman nor an engineer, it is always a matter for argument as to whether the combination of proprietary schools and collegiate institutions, or public vocational schools, should be responsible for this "middle ground" individual. This question of "who shall provide the educational opportunities for technicians?" has been debated at conferences on technical education from New Jersey to California.

On occasion, vocational education personnel have asserted that the need for technicians is of such desperate proportions that "all hands" are required, and instead of debating about who shall do the job, all available educational facilities should approach the task in a united effort. Incredible though it may seem, this point of view is not universally accepted, for at a national conference last year, one of the major organizations concerned with the education of technicians (whose membership is largely composed of personnel drawn from proprietary schools and collegiate institutions) overwhelmingly adopted a resolution opposing the area voca-

(*Continued on page 26*)



L. to r., W. P. Klingensmith, Robert M. Worthington, G. Harold Silvius, John A. Jarvis, G. Wesley Ketcham, William R. Mason, H. H. London, Walter Klehm, Lowell Burkett.

IAPPC cabinet meets

THE CABINET of the AVA Industrial Arts Policy and Planning Committee met in Chicago, March 22-24. Called by AVA Vice President for Industrial Arts William R. Mason, the meeting was held at the Conrad Hilton Hotel with G. Wesley Ketcham, Industrial Arts Consultant, Connecticut State Depart of Education, presiding.

Others in attendance were Dr. John A. Jarvis, Dean, Industrial Arts Division, Stout State College; Dr. Walter Klehm, Chairman, Industrial Arts Department, Eastern Illinois University; Dr. G. Harold Silvius, Chairman, Industrial Education, Wayne State University; William Klingensmith, Supervisor of Industrial Arts, Chicago Public Schools; Dr. Robert M. Worthington, Chairman, Industrial Arts Department, Trenton State College; Dr. H. H. London, AVA President; and Lowell A. Burkett, AVA Assistant Executive Secretary.

Plans were formulated for the 1959 industrial arts convention program with Dr. Walter Klehm as Program Chairman. This year increased emphasis is on classroom teacher participation, new processes and materials, and recent developments affecting industrial arts. One session will be devoted to demonstrations by outstanding teachers of *New Materials and Processes in Industrial Arts* with E. H. Curry as coordinator.

The Contribution of Industrial Arts to Technical Education will be the theme of a session chaired by Dr. John Jarvis. This program will feature outstanding speakers from industry. *Industrial Arts in American Education* will be the feature of a symposium based on the widely circulated AVA brochure of the same name. Currently being revised by an editorial sub-committee composed of Dr. Roy Orendorf, Dr. Robert Swanson, Dr. Ralph Bohn and Dr. G. H. Silvius, Chairman, this brochure will be available for distribution at the 1959 convention.

Growing out of the symposium will be a series of JOURNAL articles on topics such as problem solving and experimentation, the integration of science and mathematics in industrial arts, and the role of guidance in the program. Dr. Robert Worthington will be symposium chairman.

The National Conference of State and Local Supervisors, planned this year by Roy V. Orendorf of the New York State Department of Education, will be held prior to the opening of the industrial arts program.

AVA President Dr. H. H. London outlined some of the increased services AVA offers to education. AVA's industrial arts memberships have increased under Dr. London's leadership.

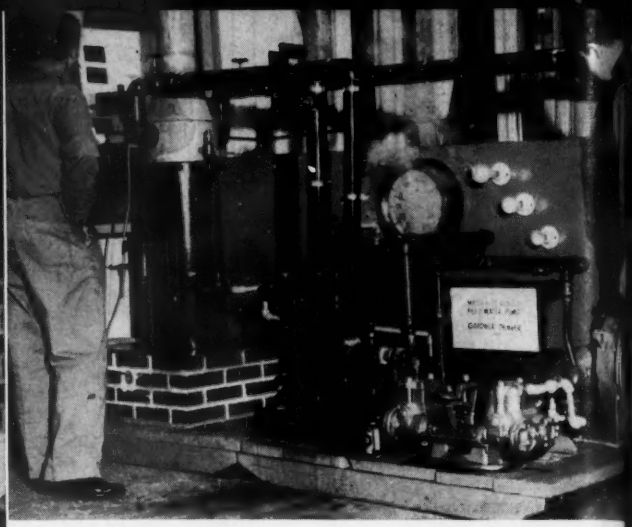
The Cabinet commended Dr. G. Harold Silvius, Industrial arts editor, and Dorothy Thompson, Managing Editor, for the outstanding industrial arts articles that have been published in the JOURNAL recently.

The National Industrial Arts Scholarship program, established in 1957 by the division, was discussed, and the possibility of establishing an Industrial Arts Scholarship Foundation will be investigated.

It was reported that *Planning Your Future in Industrial Arts Teaching,* a recruitment brochure prepared by Dr. Kermit Seefeld and a special committee, has been in great demand. A reprint will probably appear soon.

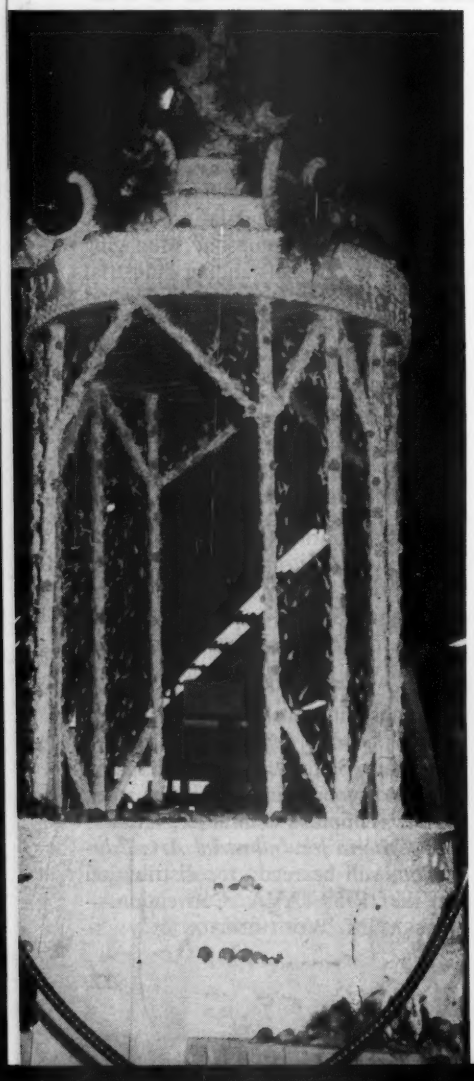
Important contributions of a committee headed by Harry Thomas, Louisiana State Supervisor of Industrial Arts, were discussed. The work of Mr. Thomas's committee, *Evaluative Criteria for Industrial Arts Education,* will be ready for distribution at the 1959 AVA Convention.—ROBERT M. WORTHINGTON

The masonry department built a house front, installed two windows and a door; then added a garden wall, one stone and one brick fireplace



The boiler room operation featured an operating electric generation plant built from a small boiler connected thru a steam engine, a pump system, a small steam turbine and finally to a generator that electrified a display panel.

Live Exhibits Bring



THE PEOPLE of Bergen County, N. J., have been made vitally aware of the programs and function of a vocational and technical high school through a mammoth action exhibit held at Berg Mall, Paramus, through the cooperation of school people, industry, and students.

Harry C. Stephan, Administrative Principal, Bergen County Vocational Schools, says response to the display (presented for two weeks—Feb. 16-28) was unbelievable. More than 100,000 visitors saw students going about regular shop activities at the $60 million shopping center. Equipment and tools were supplied by business and manufacturers.

Seventeen county-wide organizations included a visit to the displays as a feature of their monthly meetings.

A total of 800 hours of work were donated by the faculty and approximately 240 hours by administrative and supervisory personnel.

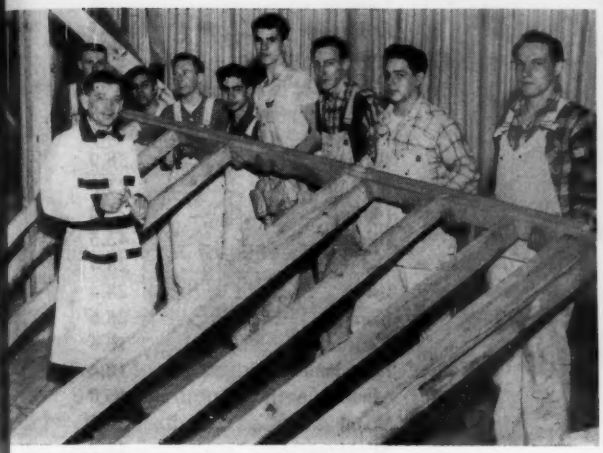
Featured on these pages are shots of some of the displays that, combined, were often classified as "the greatest public showing in New Jersey."

Almost every instructor now has a list of employers who stopped by to ask him to be sure to get in touch with them at graduation time.

Nine students used 1,400 pounds of icing to decorate this 23-foot high wedding cake, later used as the scene of a mock wedding, with live models

Students fulfilled their daily shop routine at the huge shopping center display for two weeks. Here boys work at mechanical drafting assignments.

Industrial chemistry students threw magnified pictures of microscopic materials and live paramecium on a viewing screen, captivating all visitors



Carpentry students built a one-story structure

Part of the Future Farmer exhibit

Life Training to Life

Two offset presses were in continuous operation, with negatives made up as the public looked on

Visitors called auto service work excellent

Future Farmers offered a typical barn yard scene with a greenhouse, landscaping, flowers and a continuous live animal display. Eggs were set to hatch in a showcase

Official tellers Boyd Hargraves, James L. Givens and Edward D. Reed had a very busy day counting ballots.

Claude to Head AVA

EDWARD M. CLAUDE, Illinois State Chief, Trade and Industrial Education, was named to succeed Dr. H. H. London as AVA President for the 1959-60 membership year in the Association's third election by ballot March 10.

Official tellers, appointed by the AVA Executive Committee, were:

James L. Givens, vocational agriculture teacher, Winchester, Va., Chairman;

Boyd Hargraves, distributive education coordinator, Arlington, Va.; and

Edward D. Reed, Principal, Chamberlain Vocational High School, Washington, D. C.

Members of the AVA Washington staff were present at AVA headquarters on March 10 to open envelopes and turn ballots over to the tellers for counting.

In compliance with provisions of the AVA Constitution, this is to certify to the Executive Committee of the American Vocational Association, Inc., that

Edward M. Claude, Chief
Trade and Industrial Education
State Department of Education
Springfield, Ill.,

has been duly elected AVA President for the 1959-60 year by virtue of the fact that he received a majority of the votes cast by AVA members from a careful count by authorized tellers of the ballots mailed to the Washington headquarters office of the AVA postmarked not later than March 10, 1959.

We further certify that when we began our duties as tellers, we found that all ballots received in official designated envelopes marked "ballot" were unopened.

EDWARD M. CLAUDE

BALLOTING RESULTS

STATES	Percent of members who voted
Alabama	24.4
Arizona	35.4
Arkansas	18.9
California	53.8
Canada	37.0
Colorado	31.1
Connecticut	26.6
D.C. (Washington)	34.7
Delaware	26.5
Florida	18.6
Georgia	8.9
Hawaii	23.3
Idaho	25.2
Illinois	43.5
Indiana	28.4
Iowa	28.4
Kansas	25.6
Kentucky	16.6
Louisiana	18.4
Massachusetts	16.0
Maine	34.2
Michigan	43.2
Minnesota	24.7
Mississippi	21.4
Montana	25.0
Missouri	30.6
Maryland	29.3
Nebraska	35.2
Nevada	22.8
New Hampshire	25.0
New York	19.1
New Jersey	22.7
New Mexico	29.7
North Carolina	15.8
North Dakota	21.1
Ohio	23.0
Oklahoma	14.3
Oregon	37.2
Pennsylvania	30.3
Puerto Rico	14.8
Rhode Island	47.3
South Carolina	12.0
South Dakota	26.2
Tennessee	15.9
Texas	19.8
Utah	19.9
Vermont	38.1
Washington	31.3
West Virginia	22.9
Wisconsin	24.5
Wyoming	23.3
Virginia	26.1
International	9.7
Postmark unreadable—164	
Total	21.4

School Administrators Say—

Indiana's Sold on Vo-Ed

By Ralph R. Bentley and Frank J. Woerdehoff

DO SCHOOL administrators believe vocational education is an important responsibility of secondary education?

How do they view their role in the development and operation of a local program of vocational education?

What viewpoints do they hold regarding the objectives and operational aspects of the program?

Answers to these questions surely have important implications for vocational educators. To sound out opinion, a study was conducted to discover the viewpoints of Indiana school administrators. This report reviews the replies of 712 secondary school principals and superintendents in Indiana—or 70 per cent of the total.

OPPORTUNITIES FOR vocational education are believed to be an important responsibility of secondary education by 91 per cent of the respondents, and 84 per cent agreed that skills for earning a living are as important as skills for social living. Furthermore, 94 per cent felt that vocational education courses deserve credit equal to academic courses in the curriculum. Only five per cent expressed the belief that bright pupils should be discouraged from taking vocational education courses.

Seventy-one per cent of the administrators indicated that the per pupil cost for vocational education is justifiable even though it is higher than the cost of most other types of educational programs. Eighty-two per cent believed that the enrollment per class should not exceed 25 pupils. The views administrators expressed varied widely with regard to all pupils being interested in vocational subjects, the socio-economic level of vocational education students, and whether vocational education should be specific or general.

THE MAJORITY of Indiana school administrators viewed themselves as the key persons in the development and operation of local programs of vocational education. Even so, they consider it desirable to delegate certain administrative responsibilities of the vocational program in the local school system to head teachers, directors, or supervisors. By inference, however, they indicated a strong interest in participating in matters having to do with state policy development and interpretation.

VOCATIONAL EDUCATION presents problems of special complexity and difficulty because of the unique administrative duties involved. Indiana school administrators have often complained about such administrative problems as scheduling classes, making special reports and meeting specific program requirements. Yet, when they expressed their viewpoints in the study it was found that only one of every four considered the program too difficult to administer.

INDIANA SCHOOL administrators believe the costs of vocational education are justifiable. As evidence of this, 81 per cent agreed that the benefits of a vocational homemaking program more than justify the cost of its equipment and maintenance. Similarly, the cost of facilities and equipment for vocational agriculture were deemed justifiable.

There was a decidedly different reaction to the cost of vocational trade and industrial education. While only 13 per cent said it was too expensive to be included in the secondary school, 40 per cent were uncertain.

THERE WAS MUCH uncertainty and a variety of opinion among Indiana school administrators as to whether or not vocational education is a federally controlled program. Twenty-two per cent were undecided, while 36 per cent believed and 38 per cent did not believe that vocational education is federally controlled. A wide range of viewpoints was also found among administrators as to whether or not the State Department of Public Instruction has any control over federally reimbursed vocational education.

Apparently, Indiana school administrators are seriously concerned about state and federal policies regarding the amount of time to be allotted for instruction in vocational classes. This appeared to be a point of controversy. The majority viewpoint indicated administrators prefer this to be a matter of local determination.

Administrators obviously need to understand clearly that the State Board for Vocational Education is charged with four main responsibil-

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*This article is based upon a research study of *The Viewpoints of Indiana School Administrators Regarding Vocational Education.*

EDITOR'S NOTE: *The material in this report is of special significance to persons in all phases of vocational education.*

It is especially recommended to the attention of all JOURNAL *readers.*

ities: supervision, improvement of instruction, teacher training, and administration. Much more emphasis should be given to the fact that the federally reimbursed program constitutes only a part of the total vocational education program in the state. As we know, federal grants serve to promote and stabilize vocational education but they do not restrict the administration of the program nor do they relieve the state of its financial support.

When asked about the desirability of financing vocational education programs in part by federal funds, only 21 per cent were opposed to this system. Nearly one-half of the administrators consider federal funds to be desirable. Twenty-eight per cent were undecided.

TEACHERS OF VOCATIONAL subjects often complain that their classes are used as a "dumping ground" for low ability and problem students. This may be the case in certain schools, but such practice apparently does not coincide with the expressed viewpoints of school administrators. Eighty-nine per cent of the Indiana school administrators said they would not discourage bright students from taking vocational courses. Ninety-five per cent believe homemaking education is as important for students of superior ability as for those of lesser ability. Replies reveal there is an apparent difference between the expressed beliefs of school administrators and the undesirable "dumping ground" practice.

When school administrators were asked whether or not vocational courses should be required or elective, approximately one-half replied that vocational education should be a part of the education of all secondary school students. A large majority however, felt that vocational courses should be elective. This is particularly true in the case of vocational agriculture where 92 per cent of the respondents said courses should be elective, and in vocational home making where 75 per cent indicated that enrollments should be elective.

One out of every three school administrators indicated that high school students selecting vocational education courses are usually from the lower socio-economic group of the community. Rural school administrators were much less inclined to agree with this idea than were city school administrators. In general, the principals of larger high schools tended to agree to a greater extent than did principals of smaller schools with the belief that high school students selecting vocational courses come from the lower socio-economic group. Of particular interest is the fact that 94 per cent of the administrators believe that home-making education is as important for girls of high socio-economic levels as for those of a low socio-economic level.

TODAY, THROUGHOUT the nation, many educators have come to regard education for adults equally as important as education for high school students. A majority of Indiana school administrators, however, either did not believe in or were uncertain about the responsibility of the public schools for providing vocational education for out-of-school youth or adults. Only 30 per cent of the administrators agreed that classes for adult homemakers should be conducted in schools that maintain departments of vocational homemaking. Slightly more than 40 per cent favored classes for young and adult farmers and for adult trade and industrial education.

When asked if agricultural education for adult farmers should be provided by agencies other than the public schools, approximately one-fourth of the administrators indicated that they thought this desirable. Forty-five per cent disagreed with this point of view. In this matter the viewpoints of the county superintendents and county principals participating in the study were significantly different. The percentage of county superintendents who would not relinquish this educational responsibility was much greater than found among county principals.

It is apparent that very few Indiana school administrators believed that the public schools have a responsibility for providing trade extension training, apprenticeship training, and training for industrial supervisors and foremen. The findings show that only 34 per cent believed that the public schools should train industrial workers. Only 10 per cent believed that secondary schools are responsible for the related instruction required of apprentices. Sixteen per cent viewed the trade and industrial education program as having a responsibility for training supervision and foremen personnel. Only seven per cent of the administrators believed that trade extension classes should be confined to those who are presently employed in the given trade or occupation. Finally, only 20 per cent expressed the belief that the public secondary schools should provide an industrial educational program for out-of-school youth to fit them for useful employment.

MOST EDUCATORS would agree that the success of any educational program is determined largely by the quality of its teachers. Since administrators are in a strategic position to observe teachers and make judgments regarding them, it seemed highly desirable to obtain the administrators' viewpoints of vocational teachers. Among the 712 Indiana school administrators there was very little disagreement with the belief that professional standards of vocational teachers are as high as those of other teachers, and vocational teachers are as well prepared for their jobs as are other teachers.

Furthermore, the findings indicate that administrators believe that vocational teachers are as willing to give as much time to school and community activities as are other teachers, that they are as cooperative as other teachers in helping with extra-curricular activities, that they maintain as good order in the classroom as do other teachers, and that their ability to handle pupil guidance is equal to that of other teachers.

THE INDIANA Vocational Education Law prescribes that local boards of education or township trustees administering approved vocational education programs shall appoint an advisory committee. It is interesting to note that only eight per cent of the Indiana school administrators disagreed with the idea that an agricul-

(*Continued on page 25*)

BETTER MIND—

the why and wherefore of industrial operations

By Howard O. Meuche

SIR WILLIAM GILBERT'S little ditty, *Never Mind the Why and Wherefore,* could well be the theme song for industry training programs—IF that *Never* were changed to *Better.* Industry has changed its tune. More and more emphasis is being placed on *Better Mind the Why and Wherefore* of each operation in specialized industries. It is no longer enough for the employee to learn on the job by the pick-up method without "know why" supervision. Definite steps are being taken today to give him a better comprehension of the physical phenomenon he is working with . . . examples of the theories involved and their function in a finished product.

The enormity and diversity of products in today's market calls for organized comprehension of their reason for existence, their specific functions and limitations, and their relation to each other. This knowledge must be gained through on-the-job training . . . methodically, thoroughly and professionally taught.

The complexity of products, to say nothing of the intricacies of manufacturing operations, are obvious reasons to attempt to include fundamentals, theory and reason in the worker's understanding of the product he is helping to make available to the public and industry. Those responsible for servicing these products are in need of the same education.

This diversity and complexity is a basic problem that confronts industry, educators and the manufacturers of educational equipment. Today's students—be they graduates of colleges, high schools, or vocational schools—require additional specialized training before they can take their place as productive members of society.

SINCE IT IS IMPOSSIBLE for schools to provide specialized knowledge in all fields, the responsibility devolves quite naturally upon industry itself. However, industry has every reason to expect adequate background qualification in *principles.* If the students have had the opportunity to study principles in their basic form, subsequent training can readily relate principles to specific applications.

Far too often, learning or training, particularly at the vocational level becomes purely mechanical without regard to the "Whys" and "Wherefores." In this respect, the educator and the manufacturer of educational equipment have a common objective. "Educationally designed" equipment enables the instructor to teach the principles and, more important, enables the student to grasp the principles.

GENERAL MOTORS, for several years, has taken definite and all-encompassing steps to teach "know-it-yourself" in well-equipped class rooms under competent and trained instructors. Specific, organized phases of instruction reach the student in 30 training schools located throughout the country.

The Delco-Remy Division has one of the schools at their Anderson, Indiana, plant. There, a two week Delco-Remy Electrical Equipment Course has been made available to:

General Motors employees including engineers, supervisors, inspectors, technicians, draftsmen and teaching personnel from other GM plants;

With the use of charts and Crow Rotating Electrical Machinery, Frank Ficca dramatizes the basic principles of electrical equipment

MAGNETIC FORCE ON A CURRENT-CARRYING CONDUCTOR
CURRENT PASSING THROUGH A CONDUCTOR IN A MAGNETIC FIELD CAUSES A DISTORTION OF THE ORIGINAL FIELD. CONDUCTORS MOVE TOWARD THE WEAKENED FIELD.

Mr. Meuche is President, Universal Scientific Co., Vincennes, Indiana.

Application of classroom principles on specific service equipment

Instructors from vocational schools throughout the country during the summer months; and

Service people from many companies using Delco-Remy products as original equipment—for basic training and refresher courses.

I had the pleasure of visiting the Delco-Remy Service school in Anderson recently. Frank Plovick, Service Manager, discussed the cooperative working arrangements of the service training schools operated by the various General Motors Corporation divisions. Clarence Walker, Jr., Service Engineer, acted as our informed and informative guide to the classroom-workshop setting of the school

Frank Ficca, a dynamic instructor who projects his teaching with enthusiasm and that all-important feeling of "knowing his subject," pointed out that the products manufactured by this division are highly engineered and designed for practical assembly, compactness and efficiency. It is apparent that the underlying principles, such as electromagnetic theory, would have to be demonstrated with equipment specifically designed to make these principles observable and comprehensible.

CROW ROTATING Electrical Machinery was selected as the most practicable medium to place electrical theories, principles and functions within a common grasp. By using equipment designed for educational purposes, it permitted Delco-Remy to begin their course with material that quickly and easily presented the pertinent principles applicable to their products. Abstract theories are translated into simple understandable terms. Concepts are developed in step-by-step fashion and then logically lead into specific applications.

A typical class session starts with a lecture to a group of 12 to 14 students using the equipment mentioned. A comprehensive review of electricity and electromagnetic principles is given at this time. The next day the class is broken down into groups, several students are assigned to the working models of rotating electrical machinery because Delco-Remy knows that proper training demands that theory be backed up by practice. Ficca visited each group, discussed various phases of the operation with them and answered their questions.

The following day the class met in the Delco-Remy shop and applied the basic principles they had just learned. They saw how these rudiments fit into specific Delco-Remy voltage regulators, generators and cranking motors. Each individual subject is covered in this way, becoming an integral part of the two-week session.

Particularly impressing was the emphasis on trouble-shooting because *here* lies an outstanding need for a clear perception of all the problems involved and their relation to each other. Delco-Remy has pin-pointed the importance of a lucid understanding of this subject and an entire section is devoted solely to trouble-shooting. Actual problems are worked out by the individual student; *now* his classroom work is given more specific application—again he learns by doing, but this time by analyzing and repairing actual, current electrical systems *on the car*. Twelve-volt systems are given special emphasis because of the increasing demands of this service group.

THE THOUSANDS of people who have learned more about electrical equipment by visual experiment leave these training centers more able to realize higher personal accomplishments and make more creative contributions to industry.

THE SIGNIFICANT and increasing role that electricity and electronics now plays in industry, national defense and the psychological cold war points up the need for a "thinking man" in every phase of industry—a man who *knows how* because he *learned why*.

Students learning by doing.

INDIANA'S SOLD ON VO-ED

(*Continued from page 22*)

tural advisory committee should be appointed to work with the teacher of agriculture and the administrator in each school that maintains a department of vocational agriculture. Fifteen per cent were undecided while 75 per cent endorsed the State Board policy prescribing advisory committees for vo-ag.

Sixty-seven per cent of administrators agreed that it was desirable to to have an advisory committee established to work with the homemaking teacher in each school that maintains a vocational homemaking department. The findings indicated that about one out of every five Indiana administrators were undecided about the desirability of this practice.

Most vocational trade and industrial education leaders advocate that local advisory committees for this vocational training area should consist of representation of employees and employers. Almost 40 per cent of the administrators in this study were undecided about having advisory committees for trade and industrial education composed of an equal number of representatives of employees and employers. Fifty-four per cent agreed to this type of composition and four per cent disagreed.

An important finding in the study indicated that Indiana school administrators were more reluctant to consult union and employee groups than they were to consult employers, regarding the establishment and operation of trade and industrial education programs. Only 56 per cent believed that unions and employee groups should be consulted, 25 per cent were undecided and 18 per cent disagreed with this practice. Eighty-five per cent agreed that employer groups should be consulted, 11 per cent were undecided, and only one per cent disagreed.

Summary of What School Administrators Think About Vo-Ed

School administrators believe that providing opportunities for vocational education is an important responsibility of secondary education.

Superintendents and secondary school principals believe that successful programs of vocational education depend to a large extent upon the degree to which they encourage and support the program.

While the school administrators view themselves as having a key role in the development of vocational education programs, they favor having local advisory committees appointed to counsel with administrators and teachers of vocational subjects.

The cost of vocational education, although higher than for most subjects, is considered justifiable by the majority of school administrators.

Most school administrators do not believe that vocational education programs create too many administrative problems.

There seems to be a lack of understanding among school administrators regarding the extent to which state and federal authorities regulate local school programs.

The time allotment requirements for class instruction is a policy which administrators believe should not be determined by state and/or federal agencies.

School administrators favor having the state department of public instruction determine standards for approving the facilities for local department of vocational education.

The majority of school administrators are not opposed to the use of federal funds for the program.

School administrators believe that vocational courses should be elective.

The majority of school administrators do not believe or are uncertain about the responsibility of the secondary school for providing vocational education opportunities for out-of-school youth and adults.

The majority of school administrators do not believe that bright students should be discouraged from taking vocational education courses.

There is a significant difference of opinion between urban and rural school administrators regarding the socio-economic level of pupils enrolled in vocational education courses.

School administrators consider teachers of vocational subjects to be comparable to other teachers with respect to training, professional attitudes and willingness to cooperate in school and community activities.

School administrators having had experience with vocational education programs tend to hold more favorable viewpoints than those not having had such experience.

EXPANDING JOB PROSPECTS IN LOCKSMITHING

Today's shortage of locksmiths means there are outstanding opportunities everywhere in this interesting field. Scores of our graduates write that they find locksmithing very profitable — whether they are working in their own shop or in a part-time or full-time job.

The Locksmithing Institute course consists of a series of clearly written, well-illustrated lessons. Students get practical experience by completing actual jobs and submitting them to the school—they do the work under the personal guidance of experts. All special tools and supplies are, of course, furnised free with the course.

Locksmithing Institute is the only school of its kind which is licensed by the State of New Jersey and accredited by the National Home Study Council. It is fully approved for veterans.

We will be happy to supply complete details about locksmithing as a vocation and about Locksmithing Institute training. Guidance officers are invited to write on their letterhead to: Dept. 3004-9

LOCKSMITHING INSTITUTE
150 Park Avenue, East Rutherford, N. J.

New!

4TH EDITION

ELEMENTS OF RADIO

by Abraham and William Marcus

The most widely used (over 1,000,000 copies) book in radio fundamentals is ready in a better than ever *4th Edition*. There's a wealth of new material in this new edition. For instance: new developments in the design of tubes; the new crystal diode; latest information on transistors and new equipment. To make every point clear, the written material is richly supplemented by large, clear, functional diagrams, photographs, and useful tables. See the text with the famous "spiral" organization that treats *all* basic elements of radio.

PRENTICE-HALL
Educational Book Division
Englewood Cliffs, New Jersey

Industrial education can move ahead fast

(*From page 16*)

tional program provisions included within the National Defense Education Act of 1958.

Further, while lamenting the limited facilities for the training of technicians on the one hand, the conference actually opposed the further intervention of the publicly supported vocational school in alleviating the critical technician shortage! All educators in the field of industrial education must question whether the education of the technician in the interest of national defense can justifiably be reserved for *any* specialized institution, public, collegiate, or proprietary.

Public industrial educators who for decades have kept programs attuned to the needs of industry in their respective cities and states regard technician education as an extension of their services and *as the premium program*. Industrial educators have the "know how," motivation and industrial background to develop precisely the kind of technician training so urgently needed by America's industries. By contrast, when a collegiate institution takes on a program of less than four year degree-granting status, there is danger that the institution may regard such a program (in this case the Technical Institute) as a feeder for its four-year engineering program, as well as the receiver of misfits and dropouts from the four-year program. Whether by design or by chance, the Technical Institute *under collegiate auspices* may easily become the Class B program of the engineering school.

THE PREPARATION of technicians is a highly specific process in education, requiring carefully selected individuals trained and educated to the proficiency required by industry. To accomplish this highly important task the program offered by the Technical Institute must be specifically designated as that kind of an educational opportunity which differs in philosophy and intent from that of the engineering college. The Technical Institute is in the process of emerging as an entity of its own. In order to be of collateral assistance in this development stage, industrial educators must classify the Technical Institute *as the premium program* and the upward extension of the trade and industrial education program—*not as the downward extension of an engineering college program.*

IT IS POSSIBLE for industrial education to move ahead in the new dynamic Technical Institute field, without new buildings, new facilities and additional staff. Obviously, a full range of day Technical Institute offerings cannot be carried on without adequate classroom and laboratory space, facilities and staff. However, considerable progress has been made in using the regular day school trade and industrial facilities as the basic elements of an evening Technical Institute program for training technicians.

The preparation of the post-secondary technician type person for industry will not wait upon the development of buildings, appropriations, and long-range planning. The need for technicians is here *now*. Vocational educators must take up the challenge and move into the problem of technician training to provide industry with the personnel it requires.

The situation as it has developed during the past two years in Connecticut may provide an example of how one state met this training request. Of the 14 regional vocational-technical schools operated by the state of Connecticut, nine are already involved in an evening Technical Institute four-year program leading to a diploma for 2,000 enrollees in Mechanical Technology, Electrical Technology, or Tool Design Technology. Using the buildings which daily house the secondary level trade and industrial education program, and operating from 4 to 7 pm and from 7 to 10 pm four evenings per week, post-secondary, Technical-Institute-level instruction is offered.

These courses offered in the several technologies are taught by engineers and other persons drawn from the industries of the state who are certified as instructors in specific areas. The well-equipped physics, chemistry, and testing materials laboratories used in the all day secondary school program are thus made to do double duty in the programs offered in the evening Technical Institutes. Shops are occasionally used to emphasize the content of the technical courses, but since craftsman skills are not the fundamental need of the technician, they are of secondary importance.

THIS IS one answer to meeting the twin problem of upgrading employed industrial personnel and producing technicians for modern industrial needs. Since the preparation of technicians of a post-secondary level is essentially a vocational problem, a start on the solution can be made in almost any center for trade and industrial education.

From the U.S. Office

Patient-Centered Teaching was the topic of an address by Barbara R. Fallon, Program Specialist, Practical Nurse Education Branch, during a practical nurse education workshop held in Johnson City, Tenn., March 2-6. This topic is receiving increasing emphasis in instructors' workshops in the various states.

* * *

V. Ray Cardozier spent three days in Chicago, (February 28 to March 2) with the chairman and four other members of the AVA Committee on Research in Agricultural Education, developing schedules to be used in collecting data in the final phase of the National Young Farmer Study. This two-year phase of the study involves the establishment of "trial centers" of young farmer classes. Previous research has established a pattern of characteristics which usually is associated with successful young farmer programs. This pattern will be followed in the trial centers. Data will be obtained from teachers and young farmer enrollees in the centers at the beginning and at the end of the two-year program in order that changes may be measured.

* * *

Careers in Home Economics is a new publication developed by Muriel McFarland, Consultant, and Berenice Mallory, Assistant Director, Home Economics Education Branch, in cooperation with the Guidance and Student Personnel Section of the Office. This leaflet was designed to serve as a reference for counselors and other individuals who advise students about the scope of home economics, the career opportunities, and the professional requirements necessary for the various careers. Free copies are available upon request from the Publications Inquiry Unit, U. S. Department of Health, Education, and Welfare, Washington 25, D. C.

* * *

Harold F. Duis, formerly State Director of Agricultural Education in Nebraska, joined the staff in April as Program Specialist for the Central Region in the Agricultural Education Branch. He succeeds

A. W. Tenney who became the Executive Director of the Agricultural Hall of Fame at Kansas City, Missouri, in January.

* * *

Lois Oliver and Ruthanna Russel represented the Future Homemakers of America at the April 8 meeting of the Council of Member Organizations of the United States Committee for the United Nations held at the U. S. Department of State in Washington, D. C. A report of work done by various member organizations was made, and representatives gave suggestions for future action.

* * *

David Robinson, former DECA Club Service Director, has joined the staff of the Distributive Education Branch of the Office to conduct a study on *Educational Projects in Distribuitve Education Club Programs.* The study is to outline directions for educational projects that might be undertaken as part of the club program for distributive education cooperative programs.

* * *

Two consultants, employed by the Division of Vocaitonal Education, have been providing valuable assistance to the Trade and Industrial Education Branch in planning and developing plans for two national conferences. William Williams, Teacher Trainer at Pennsylvania State University, has been working with Howard K. Hogan, Project Coordinator for the Office of Education Conference on the School's Contribution to Occupational Safety Through Shop Safety Programs, to be held in Washington, D. C., April 16-18. James Newell, Coordinator of Vocational Education in Kansas City, Missouri, has been working with Mary S. Resh, Project Coordinator for the National Conference on Trade and Industrial Education, to be held in Kansas City, Missouri, April 27-May 1.

* * *

At the annual convention of the California Industrial Education Association, held in Stockton on March 14, Vera P. Hansel spoke on *Teaching Aids in the Atomic Age.* She served as chairman of the general session on Saturday morning, March 14. She also spoke at California's 21st Annual Conference on Industrial Education sponsored by the State Department of Education, Bureau of Industrial Education, in Stockton on March 12. Her topic was *Looking to the Future.* Much interest was expressed as to what the future may hold for practical nurse education.

* * *

Alvin H. Hollenberg, Program Specialist, Farm Mechanics, represented the Agricultural Education Branch in a two-day Rural Civil Defense meeting held recently in Washington, D. C. The group is advisory to the Federal Civil Defense Agency. In addition to government agencies involved in agriculture, representation included farm organizations, radio and television farm directors, agricultural magazines, and others. Subjects discussed included the effects of radioactive fallout, stockpiling of foodstuffs and medical supplies, shelters, and continuation of government.

* * *

Vera P. Hansel, Chief, Practical Nurse Education Section, has been appointed a member of the Committee for the National League for Nursing Accreditation of Practical Nursing Programs. The NLS is the accrediting body for professional nursing programs and is moving in the direction of national accreditation for practical nurse programs.

* * *

Foods and nutrition teachers from colleges and universities in some of the States of the North Atlantic Region participated in a conference in Philadelphia, April 12-14. Margaret Alexander, Program Specialist, Home Economics Education Branch, served as consultant for this meeting which was a follow-up of the work done by a naitonal committee of college teachers of foods and nutrition organized under the direction of the Home Economics Education Branch.

* * *

John A. Beaumont, Director, Distributive Education Branch, was the keynoter at the distributive education area session of the Eastern Business Teachers Association Sixty-Second Annual Convention in Atlantic City, N. J., March 27. His topic was *The Scope and Content of the Distribtuive Education Program* with particular emphasis on the teaching content of the program.

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Applause

—to the Wisconsin Association of Vocational and Adult Education for listing 17 reasons why members of the profession should belong to WAVAE and AVA in the January, 1959 issue of the organization's newsletter YOUR ASSOCIATION BULLETIN. In an introductory statement, the membership promotion reads:

"Perhaps the strongest argument we have for our existence is the fact that more than 30,000 individuals can band together nationally to accomplish goals which no single individual could accomplish on his own, and in a like manner, do the same thing on a state level. The State Association is the key to a strong national organization—only as the professional organizations in the several states take active steps to promote all phases of vocational and adult education and the welfare of vocational and adult teachers, will the profession advance, and with it the quality of education offered the American People."

—to the Michigan Industrial Education Society, Inc., for the feature on "wives" that kicks off Vol. XVIII, No. 3 issue of the MIES NEWSLETTER. Titled *Wives Behind the MIES,* it includes pictures and biographical sketches of wives of officers of the organization.

—to Lowell A. Burkett, AVA Assistant Executive Secretary for his successful promotion of AVA membership activity at the grass roots in conducting many workshops for officers of state associations throughout the nation.

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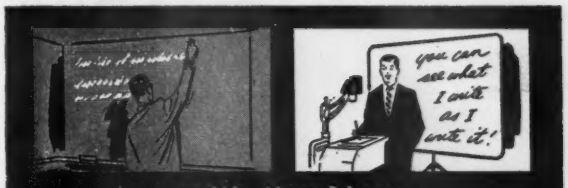

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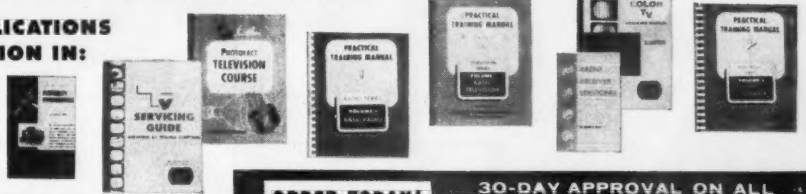

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Around the Nation

MONTANA STATE COLLEGE SENIOR WINS AWARD

The winner of The Pillsbury Award for 1959, a unique "on-the-job" training scholarship established this year which will be awarded annually hereafter, has been announced by The Pillsbury Company, Minneapolis, Minnesota.

She is Deanna I. Suneson, home economics major at Montana State College, Bozeman, Montana. The Award offers her an opportunity rarely open to a student immediately upon graduation from college—that of stepping into a key position with a major company. Miss Suneson will become Associate Director of Pillsbury's Junior Home Service Center for one year. At the end of that time, she will be offered either another position with Pillsbury or the opportunity to undertake graduate study in home economics.

Six runners-up for the Award will each receive $250. They are: Nancy Swain, University of Illinois; Patsy Gayle Jones, University of Alabama; Joan E. Roth, University of Minnesota; Madeline J. Wiley, Iowa State College; Aliceann George, University of Cincinnati; and Virginia M. Card, South Dakota State College.

Miss Suneson is 22 years old and has her home in Davis, California. She is a member of such honor societies as Alpha Lambda Delta, Spurs, Mortar Board and Phi Upsilon Omicron. She is listed in "Who's Who Among Students in American Universities and Colleges." For several summers she has worked in the Registrar's Office at the University of California at Davis. Her interests include music, particularly the clarinet, tennis and swimming. She will be present as a Pillsbury representative at the AHEA Convention in Milwaukee in June.

ARMED FORCES DAY, 1959

Over the past decade, Armed Forces Day, the third Saturday of May, has become an important date in the calendar of the Nation. In the annual observance of this day, it is a priviledge to join my fellow citizens together with the Army, Navy, Air Force, Marine Corps, Coast Guard, their reserve components and auxiliaries.

Assisted by national, State and local civil authcrities and organizations, every effort will be made to increase public understanding of the role of our Armed Forces as a defensive shield serving in partnership with friends around the world. Toward this end, I know that the members of the Armed Forces will discharge their responsibilities with pride and purposefulness.

Armed Forces Day 1959 provides an opportunity for our people to demonstrate their belief in the constructive "Power for Peace"—to which the Armed Forces of the United States are totally committed.—DWIGHT D. EISENHOWER, President of the United States of America

Potential national champions were in action recently when the Washington, D.C. BM&PIU Local staged its annual Bricklayer Apprentice Competition at the Washington Brick Co. The competition, typical of State and local championships being held across the nation, is a forerunner of the BM&PIU 11th Annual Bricklayer Apprentice Competition in San Francisco, May 1-6.

National masonry industry officials on hand to observe the local contest were representatives of construction industry organizations which support the Bricklayers' Union apprenticeship activities, including the San Francisco finals.

L. to r.: William F. Roark, Mason Relations Director of the Structural Clay Products Institute; Thomas F. Murphy, Treasurer of the Bricklayers Masons & Plasterers International Union; William F. Nelson, official of the Mason Contractors Association of America and prominent Washington, D. C. mason contractor; and Douglas Whitlock, Board Chairman, SCPI. Brian Davis is the Washington, D. C. apprentice busy working on his contest entry.

AVA Executive Secretary Dr. M. D. Mobley and J. B. Perkey, Oklahoma State Director of Vocational Education were among those who recently inspected facilities and programs at the Bucks County Technical School, Fairless Hills, Pa. Here, Mr. Perky (center, rear) observes an experiment conducted by students Aileen Plunkett, Newell A. Perry and John Peterson (l. to r. foreground).

COOPERATIVE ACTIVITIES IN MISSOURI

By G. F. Ekstrom,

In Missouri the groups in practical arts and vocational education from the State Department of Education and the University of Missouri participate in a number of cooperative activities which contribute to better understanding of the programs involved. The activities stem from quarterly meetings of the State and University staffs and from an annual meeting involving trainees at the University.

Location of the joint meetings is alternated between the State office at Jefferson City and the University at Columbia. The sessions start at 4:00 p.m. and terminate at 9:00. The dinner hour (from 6:00 to 7:00) provides for informal visitations. A co-chairman is designated annually from each of the Missouri staffs and the agenda is devoted largely to reports of standing committees. Currently the committee work has dealt with the need for area vocational schools and the promotion of adult education.

The committee on area schools has compiled data showing the location of existing vocational programs in the state, with specific information concerning the few area schools which exist. A dissertation for the Ed. D. degree sponsored by the committee and involving one of the low-income counties of the state, was completed recently by a graduate student.

The adult education project has consisted of two phases. The first was a survey of all programs of adult education sponsored by the public schools in 1957-58. Comparisons were made to a previous (1952) doctoral study of adult education in Missouri. The second phase is a promotional one which may continue for some time. At present, a publication on adult education is being developed. Subsequently it is anticipated that a series of district conferences on adult education will be conducted in various sections of the state.

During recent joint meetings a part of the agenda has been devoted to presenting information regarding the different programs with emphasis on teacher education and supervision.

Annual meetings with the student groups are held at the University. Planning is alternated between the various services. The 1959 meeting was held Feb. 26 and consisted of an address on the place of the practical arts and vocational education in the "Sputnik Age", followed by a panel discussion featuring questions by students. Exhibits featuring the different training programs were prepared by students.

VEHICLE SAFETY CHECK MATERIAL AVAILABLE

The Inter-Industry Highway Safety Committee and Look Magazine are sponsoring National Vehicle Safety-Checks for communities in states that do not require periodic inspection of motor vehicles during the months of May and June.

A kit of materials prepared to help guide local organizations in planning for safety-check programs is available from the National Vehicle Safety-Check for Communities headquarters office, 316 Ring Building, Washington 6, D. C., at no charge. M. R. Darlington, Jr., is Director.

U OF CALIFORNIA HONORS EDWIN A. LEE

Dr. Edwin A. Lee, first President of the American Vocational Association (1926-27) was awarded the Honorary Degree of Doctor of Laws at the 91st charter day anniversary of the University of California March 23. Dr. Lee, who is Dean Emeritus of the School of Education, Los Angeles campus, retired July 1, 1957. His degree was conferred by Dr. Clark Kerr, President of the University of California, and authorized by the Regents of the University.

Recognized for his contributions to the University on two campuses (Berkeley and Los Angeles), Dr. Lee was also honored for his achievements in general education. For 25 years, he was director of the University's Division of Vocational Education.

The presentation was made immediately following the annual charter day address, offered this year by The Honorable Charles H. Malik, President, Thirteenth Session, General Assembly of the United Nations. Dr. Malik, who also received an honorary doctor of laws degree, had *The University in an Age of Crises* as histopic.

CAREERS CONFERENCE

The Division of Technology, Hampton Institute, Hampton, Va., announces its first Technical Career Conference April 23—25.

Major objective of the sessions is to attract to the campus high school seniors who are interested in careers in technical and engineering fields. Participants considering matriculation at Hampton will be able to enter the Scholarship Compensation Examinations.

Luther Hardin, President, National Vocational Agricultural Teachers' Association, was main speaker at the annual banquet of the Florida Vocational Association, Tampa, in March.

Mr. Hardin reminded his listeners that all vocational educators are in the same boat, with each service manning an oar. Without full, cooperative effort, he pointed out, the boat will succeed only in going around in circles . . . "united we are strong, divided we are weak."

* * *

Governor Gaylord Nelson will present a short address at the opening session of the **Wisconsin Association of Vocational and Adult Education's 1959 Convention,** Green Bay, May 1. Also featured as a speaker on this program will be Dr. Owen B. Kiernan, Massachusetts Commissioner of Education, whose topic will be *What's Right with Education.*

In Iowa, matters relating to vocational education, apprenticeship instruction and employment are discussed at regular monthly luncheon meetings. In attendance last month, l. to r.: B. H. Greaber, Director, Division of Vocational Education; A. T. Benander, Chief, Technical Services, Iowa Employment Security Commission; Russel V. Kelso, State Supervisor, Bureau of Apprenticeship and Training; John Bell, Director of Industrial Education, Des Moines Technical High.

Front row: O. H. Beaty, State Supervisor of T & I; Elmer E. Gee, Apprenticeship Representative, Bureau of Apprenticeship and Training; A. B. Musselman, Coordinator, Trade and Industrial Education, Des Moines Technical High; Ross C. Cramlet, Supervisor, Adult Education, Des Moines Technical High School.

Entertainment and an address by Dr. Preston Bradley of Peoples Church, Chicago are included in plans for the banquet.

C. L. Greiber, Director, Wisconsin State Board for Vocational and Adult Education, will review legislative developments as part of the general meeting May 2. Later, Wilson Thiede of the Extension Division, University of Wisconsin; Jacob Frederick, Secretary Treasurer of the Milwaukee Federated Trades Council; and George Parkinson, Director, Milwaukee Vocational and Adults Schools will participate in a symposium on the future of adult education.

* * *

With three days of beautiful spring weather, the **New Jersey Vocational and Arts Education Association** played host to a record breaking nmuber of members and guests at it's 41st Annual Convention held in the Berkeley-Carteret Hotel at Asbury Park, New Jersey, March 19, 20, and 21.

Spearheaded by a 52 per cent increase over last year's membership and a theme of *"Vocational and Arts Education in Action,"* the activities began with an associated program for directors, supervisors, apprentice coordinators and guidance counselors under the direction of the Vocational Division, State Department of Education.

At the annual banquet Dr. R. C. S. Young, Public Relations Department, General Motors, Detroit, gave an inspiring talk and a citation for fostering vocational and arts education was presented to the Newark Evening News, with Robert Palmer, staff correspondent accepting.

Tentative dates for the 1960 convention at Asbury Park are March 17, 18, 19.

AVA staff members helped official tellers James Givens, Boyd Hargraves and Edward D. Reed (center) open envelopes in the presidential election at AVA headquarters Mar. 10. L. to r.: Eleanor Brooke, Betty White, Frances Morris, Joyce Hickman, Bernice Anderson, and Frances Polito. Also helping were Elizabeth Horton and Dorothy Thompson (not shown). *See story, page 20.*

Alabama Vocational Association Officers, '59-60, l. to r: C. W. Ross, Vice President, Instructor, Shelton Vocational School, Tuscaloosa; Mrs. Trath Curry, President, Home Economics Teacher, Carrolltown; K. V. Reagan, Past President, Vo-Ag Teacher, Greenville; Mrs. Evelyn Cotney, Secretary-Treasurer, Ass't. State Supervisor, Home Economics, Montevallo; and Troy C. Tullis, Ass't. Secretary-Treasurer, Ass't. State Supervisor, Montgomery, Alabama.

* * *

With *Creative Teaching through Graphic Arts Layout and Design* as a theme, the 34th Annual Conference on Printing Education will be held at the University of Colorado during the week of July 19.

Samuel M. Burt, Executive Director, **International Graphic Arts Association** (the sponsoring group) announces that more than 300 persons are expected to be in attendance.

* * *

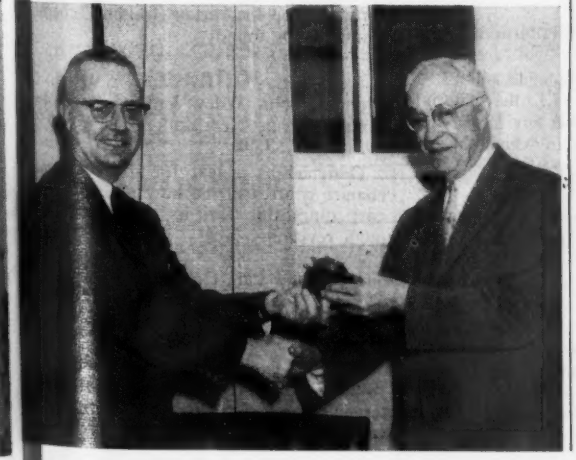
Congressman James Roosevelt (D., Calif.) recently asked members of the General Education Subcommittee of the House Committee on Education and Labor: "If the vocational education program is worth keeping in fiscal 1960, why not in fiscal 1961 and thereafter?"

Mr. Roosevelt was referring to the President's Budget Message, which calls for ending in fiscal 1961 federal grants for vocational education.

Referring to the vocational program, Mr. Roosevelt said, "I think it is worth keeping and improving—with automation forging a new technological revolution, it seems imperative that workers learn new skills in order to be gainfully employed. Presently, vocational education programs in most local communities are inadequate in intent and scope, but even these inadequate programs will suffer materially if present limited federal funds are denied."

* * *

Dr. M. Norcross Stratton, former Massachusetts State Director of Vocational Education, accepts a gift from the Chairman of the Arlington School Committee at recent ceremonies. Dr. Stratton served for 33 years as a member of the Arlington School Committee, with nine years as Chairman. He is nationally known for his work and contributions to vocational education.



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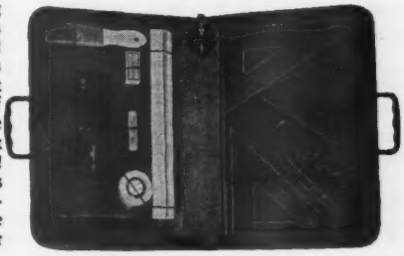

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Graphic Arts, by D. E. Carlsen. Charles A. Bennett Company, Inc., Peoria, Ill., 1958. 158 pages.

This textbook is designed for beginning pupils in graphic arts, therefore is simple yet complete enough so that junior high students can easily understand and master the various operations.

* * *

General Crafts, by George A. Willoughby. Charles A. Bennett Company, Inc., Peoria, Ill., 1958. 144 pages.

Written to give a broad view of many crafts for an overall background of understanding and information, this book is based on many years of experience in the crafts and in directing craft activities, as well as on the suggestions and ideas of many people.

* * *

Woodworking for Industrial Arts, by Ira C. Madden, B.S., M.A. The Goodheart-Willcox Company, Inc., Chicago, Ill., 1959. 223 pages, $4.00 (School Price $3.20).

The ultimate aim of this book is to help develop happy, well-adjusted individuals. It is also intended as an aid to the development of woodworking as a hobby and home workshop activity.

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Grounds Maintenance Handbook, by H. S. Conover. F. W. Dodge Corporation, 119 West 40th Street, New York 18, N.Y., 1959. 538 pages, $10.75.

This comprehensive work, written primarily for anyone responsible for developing and maintaining grounds, will serve best parks and highways personnel, landscape architects and contractors, nurserymen, civil engineers, and those responsible for the grounds of golf courses, resorts and recreational areas, industrial and commercial projects of every description.

* * *

Free Time—Challenge to Later Maturity, by Wilma Donahue, Woodrow W. Hunter, Dorothy H. Coons, and Helen K. Maurce. The University of Michigan Press, Ann Arbor, Mich., 1958. 172 pages, $4.50.

Dealing with the use of free time for the maximum benefit to ourselves and to society, this book is a valuable resource for all who contribute to planning our society as well as professionals in the field of aging.

* * *

Existentialism and Education, by George F. Kneller. Philosophical Library, 15 East 40th Street, New York 16, N. Y., 1959. 170 pages, $3.75.

Seriously concerned with our educational system of today, this book is the first attempt toward restoration on any large scale in education through the proposals of the existentialists. A possible solution to one of the basic evils of our present theories of education and, in fact, of our Western culture, is presented here. The author reminds us that history is made by individuals, not by teams, or groups, or social organizattions.

* * *

The Gentle Art of Mathematics, by Dan Pedoe. The Macmillan Company, 60 Fifth Avenue, New York 11, N. Y., 1959. 143 pages, $3.50.

The author here gives the reader a fresh and diverting slant on things mathematical, a stimulating glimpse into the fascinating world of numbers.

* * *

CQ Anthology. Cowan Publishing Corp. 1958. 160 pages, $2.00.

This work was compiled and published for a very simple reason, i.e., the material is not otherwise obtainable any longer because the original issues in which the articles appeared are not available.

* * *

Dictionary of Astronomy and Astronautics, by Armand Spitz and Frank Gaynor. Philosophical Library, 15 E. 40th St., New York 16, N. Y., 1959. 439 pages, $6.00.

This reference book contains concise definitions of over 2,200 terms and concepts related to astronomy and astronautics—a wide gamut of terms ranging from those as old as man to those as new as the space age.

Successfully Finding Yourself and Your Job, by F. Alexander Magoun. Harper & Brothers, Publishers, 49 E. 33rd. St., New York 16, N. Y., 1959. 238 pages, $3.75.

Here are practical answers to the big question of what job is right for you. It is intended primarily to eliminate trial and error.

* * *

Technical Drawing, by Grederick E. Giesecke, Al Mitchell, and Henry Cecil Spencer. The Macmillan Company, New York, N. Y., 1959. 844 pages.

This new edition covers all the basic techniques in technical drawing and incorporates the latest standards and practice, including the ASA Y-14 drafting standards.

* * *

Mechanical Design and Analysis by R. R. Slaymaker. John Wiley & Sons, Inc., 440 Fourth Avenue, New York, N. Y., 1959. 418 pages. $9.50 Trade Ed., $8.00 Coll. Ed.

Instead of devising problems simply for purposes of illustration, the author here has looked to the actual business of designing for problems that *need* to be solved. Special emphasis is on general topics essential to a machine designer.

* * *

Electricity in Aircraft, by F. G. Spreadbury. The Macmillan Company, 60 Fifth Avenue, New York 11, N. Y., 1959. 342 pages, $8.00.

This practical approach will be welcomed as a valuable source by electrical engineers, technicians and ground service staff specializing in all aspects of aircraft electricity. Systems of generation in aircraft, A.C. versus D.C., rotary converters and inverters, aircraft storage batteries, switchgear and cables, testing and test equipment are among the topics fully discussed.

* * *

Modern Foundry Practice, Technical Editor, F. D. Howard. Philosophical Library, 15 E. 40th St., New York, N. Y., 1959. 464 pages, $15.00.

This handbook for apprentices, students, craftsmen and executives in the industry features an appendix giving helpful information on the various training schemes available for foundrymen.

* * *

Mechanics Part I: *Statistics,* by J. L. Meriam, John Wiley & Sons, Inc., 440 Fourth Avenue, New York 16, N. Y., 1959. 393 pages, $5.00.

Designed as a text for the basic mechanics courses in the normal engineering curriculum, this work has undergone thorough revision.

* * *

Mechanics Part II: *Dynamics,* by J. L. Meriam, John Wiley & Sons, Inc., 440 Fourth Avenue, New York 16, N. Y., 1959. 420 pages, $5.00.

A sequel and companion to Part I, this volume includes problems carefully patterned after design situations from a wide varietey of engineering activities.

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Small Fruits for Your Home Garden, by J. Harold Clarke. Doubleday & Company, Inc., 575 Madison Avenue, New York 22, New York, 1959. 372 pages, $4.95.

The author covers every essential phase in the production of small fruits—from the individual requirements of the various species to cultivation and harvesting. Also included is a special section on small fruit breeding, preserving, and the many ways by which the home gardener can turn a hobby into a profitable enterprise.

* * *

Essentials of Forestry Practice, by Charles H. Stoddard. The Ronald Press Company, 15 E. 26th St., New York 10, N. Y., 1959. 258 pages, $5.50.

Well illustrated and mapped, and with five useful appendices, this practical textbook relates the purposes and working methods of applied forestry in the United States to the challenging problems of efficient and farsighted forest management.

* * *

Business Law for Everyday Living, by S. George Getz. Prentice-Hall, Inc., Englewood Cliffs, N. J., 1959. 448 pages, $3.60.

This second edition, planned and written with the basic thought that a knowledge of legal principles is beneficial for effective consumer living, features selected case problems, based on adjudicated cases in various states, designed to challenge the better students.

* * *

Wood Projects You Will Like, by Louis Barocci. The Bruce Publishing Company, 400 North Broadway, Milwaukee 1, Wis. 1959. 126 pages, $3.95.

This volume features such practical projects as a breadboard, kitchen stool, machinists chest, desk and chair, hollywood bed, trellis, skis, cornice board and book case.

* * *

Applied Drawing and Design, by Everett Scrogin. McKnight & McKnight Publishing Co., Bloomington, Ill., 1959. 254 pages, $4.60.

Designed to meet the need for a flexible drawing book in every respect, this fourth edition contains 517 illustrations and 172 problems. The material, tried and tested, attempts to provide for the earnest student a comprehensive ground-work in many practical branches of drawing.

* * *

Silk Screen Techniques, by J. I. Biegleisen and Max Arthur Cohn. Dover Publications, Inc., 920 Broadway, New York 10, N. Y., 1959. 187 pages, $1.45.

Written for people with no special equipment or prior knowledge, this book describes the processes and materials used in the five major stencil techniques: blockout, Tusche, paper, film and photographic stencils. There are also chapters on multicolor silkscreening, illustrated with progressives in four colors.

* * *

Industrial Arts for Grades K-6, by Professors Carl Gerbracht and Robert J. Babcock. The Bruce Publishing Company, Milwaukee 1, Wis., 1959. 160 pages, $3.50.

This new book is a complete teacher's guide to the use of practical-arts activities in elementary education. It covers the philosophy of industrial arts.

New Texts for Your Classes

Basic Mechanical Drawing
by Herbert E. Welch

This simply written, completely basic text tells the student exactly what to do and how to do it—what to draw and how to draw it. Emphasis throughout is on helping students develop drafting skills. The 395 lessons are arranged in order of difficulty, with each lesson teaching a new idea, method, or process.

Ceramics
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An illustrated guide to creating and enjoying pottery. Lavishly illustrated, with more than 660 illustrations. Stresses design. Includes construction, design, glazing, firing, and enameling on metals. Offers step-by-step teaching on how to create many beautiful types of ceramic objects. Easy to read and use by junior and senior high school students.

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This "bible" of the machine shop field gives students the information they need about the construction and safe operation of standard machine tools. The new edition contains new material on the turret lathe, cutting angles, and surface measurement, and many new illustrations.

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With the addition of Volume 3, the SERVICING TRANSISTOR library now covers approximately two hundred models!

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Alvin & Company, Inc., now offers a new line of "Paramount" drawing pencils. Scientifically manufactured under rigid standards, these pencils are highly dependable for clear, clean results both in classroom and commercial use. Consistent in quality, they surpass the standards set by commercial users and are highly recommended by instructors.

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Evidence of industry's growing interest in distributive education is highlighted by the recently published Hidden Power Teacher's Guide, a joint effort of the National Paint, Varnish and Lacquer Association and the Distributive Education Branch, Vocational Division, Office of Education.

The guide, designed specifically for use with Hidden Power, the paint industry's recently published sales training book, is based on information collected from various tested sources, including many state operated adult distributive education programs. Copies of both guide and book are being sent to all State Distributive Education Supervisors with the recommendation that classes be originated under the George Barden Act.

Hidden Power, published by the NPVLA in four main sections, has been in preparation over the past few years. The recently released first section deals with the sales training program for dealers and dealers' clerks. Consisting of seven chapters and four appendices, it deals comprehensively and clearly with all aspects of the consumer sales of paints and paint products. Chapter headings include Tips On In-Store Selling, How To Handle Complaints, Credit As A Sales Builder, How To Promote Sales, and Selling By Telephone. Each chapter uses both color and black and white illustrations to good advantage, and ends with a lengthy "check-quiz" designed to test student retention of important points. The entire section deals with the Trade Sales (consumer level) field.

Trade Sales is also the area of the second section, which will deal with the sales training program for manufacturers' salesmen. It will be released within the next few weeks. A third section devoted to Color, and a fourth for sales training in Chemical Coatings (paint products specifically formulated for manufactured products) will be released this summer and fall, respectively. Each section is priced at three dollars and is designed in loose leaf form to permit inclusion of future related material.